

## REMARKS

The present application was filed on November 25, 1998 with claims 1-21. Claims 4, 11 and 18 were canceled in an Amendment filed on December 8, 2003. Claims 1-3, 5-10, 12-17 and 19-21 remain pending. Claims 1, 8 and 15 are the independent claims.

In the Office Action, the Examiner rejected claims 1-3, 6-10, 13-17, 20 and 21 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,933,421 (hereinafter "Alamouti") in view of an article by F. Sjoberg et al. entitled "Performance evaluation of the Zipper duplex method" (hereinafter "Sjoberg") in further view of U.S. Patent No. 5,867,478 (hereinafter "Baum"), and rejected claims 5, 12 and 19 under 35 U.S.C. §103(a) as being unpatentable over Alamouti, Sjoberg and Baum in view of U.S. Patent No. 5,726,978 (hereinafter "Frodigh").

In this response, Applicant traverses the §103(a) rejections. Applicant respectfully requests reconsideration of the present application in view of the following remarks.

Independent claim 1 was amended in the previous response to include a limitation specifying that communications between the base station and at least a subset of the plurality of subscriber units are separated from one another using one or more sector-specific spreading codes, with each of the sector-specific spreading codes being associated with a corresponding sector of an antenna of the base station. Similar limitations were added to independent claims 8 and 15.

An illustrative embodiment of an arrangement of the type claimed is described in conjunction with FIGS. 12-15 of the drawings and the associated text at page 9, line 22, to page 11, line 5, of the specification. More specifically, and by way of example only, utilization of sector-specific spreading codes is illustrated in conjunction with elements 130, 146, 230 and 246 of FIGS. 12, 13, 14 and 15, respectively.

Applicant indicated in his previous response that the claimed arrangements were not disclosed in the collective teachings of Alamouti, Sjoberg and Frodigh.

The Examiner in formulating the present §103(a) rejection of independent claim 1 over Alamouti, Sjoberg and Baum apparently acknowledges the position of Applicant to the effect that Alamouti, Sjoberg and Frodigh fail to meet the limitations of claim 1 regarding the use of one or more sector-specific spreading codes. However, the Examiner argues that such limitations are shown in Baum. Applicant respectfully disagrees.

A proper *prima facie* case of obviousness requires that the cited references when combined must “teach or suggest all the claim limitations,” and that there be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference teachings. See Manual of Patent Examining Procedure (MPEP), Eighth Edition, August 2001, §706.02(j).

Applicant submits that the Examiner has failed to establish a proper *prima facie* case of obviousness in the present §103(a) rejection of independent claims 1, 8 and 15, in that the Alamouti, Sjoberg and Baum references, even if assumed to be combinable, fail to teach or suggest all the claim limitations, and in that no cogent motivation has been identified for combining the references or for modifying their teachings to reach the claimed invention.

As noted above, claim 1 includes limitations relating to use of a sector-specific spreading code. The Examiner argues that such a sector-specific spreading code is disclosed in column 5, lines 56-67, and column 6, lines 1-65, of Baum. However, the relied-upon portions of Baum relate not to spreading codes as claimed but to pilot codes. The Baum reference makes it clear that the pilot codes described therein are not spreading codes. For example, Baum at column 5, lines 24-28, indicates that the pilot codes are used as a direct replacement for “individual pilot symbols in each OFDM slot” in order to allow the performance of “channel response estimation.” Baum at column 1, lines 13-34, further indicates that conventional pilot symbols are “periodically transmitted along with the data symbols,” and as indicated previously the pilot codes are simply replacements for the pilot symbols. Thus, the pilot codes in Baum are not spreading codes as claimed in that they are apparently not applied to perform any type of spreading function, such as that associated with, by way of example, the sector-specific spreading codes in FIGS. 12 through 15 of the present application. Instead, the pilot codes themselves are simply a set of predetermined orthogonal codes, which are interspersed with data, but not utilized for spreading in the Baum system. See, for example, FIG. 15 of Baum and the disclosure at column 24, lines 4-7 and 51-54.

Also, as indicated previously, the Examiner has failed to identify a cogent motivation for combining Alamouti, Sjoberg and Baum or for modifying the reference teachings to reach the claimed invention.

The Federal Circuit has stated that when patentability turns on the question of obviousness, the obviousness determination “must be based on objective evidence of record” and that “this precedent has been reinforced in myriad decisions, and cannot be dispensed with.” In re Sang-Su Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002). Moreover, the Federal Circuit has stated that “conclusory statements” by an examiner fail to adequately address the factual question of motivation, which is material to patentability and cannot be resolved “on subjective belief and unknown authority.” Id. at 1343-1344. There has been no showing in the present §103(a) rejection of objective evidence of record that would motivate one skilled in the art to combine Alamouti, Sjoberg and Baum or to modify their teachings to meet the limitations in question. The statement of obviousness given by the Examiner at page 4 of the Office Action is precisely the type of subjective, conclusory statement that the Federal Circuit has indicated provides insufficient support for an obviousness rejection.

Accordingly, it is believed that the claimed arrangements are not disclosed in the collective teachings of Alamouti, Sjoberg and Baum. The §103(a) rejection of independent claim 1 is believed to be improper and should be withdrawn.

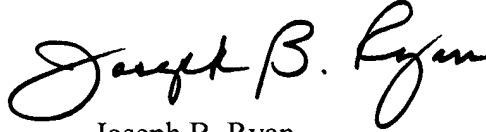
Independent claims 8 and 15 are believed allowable for at least the reasons identified above with regard to claim 1.

The Frodigh reference fails to supplement the above-described fundamental deficiencies of the proposed combination of Alamouti, Sjoberg and Baum.

The dependent claims are believed allowable for at least the reasons identified above with regard to their respective independent claims.

In view of the above, Applicant believes that claims 1-3, 5-10, 12-17 and 19-21 are in condition for allowance, and respectfully requests the withdrawal of the §103(a) rejections.

Respectfully submitted,

A handwritten signature in black ink, reading "Joseph B. Ryan". The signature is fluid and cursive, with the first name "Joseph" and last name "Ryan" clearly legible, and a middle initial "B." in between.

Date: November 22, 2004

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